Australian Bureau of Statistics

FOOTY STATS

IF THE AFL WERE ONLY 100 PLAYERS…

Activity Sheet 6

Level	Setting	Participants	Facilitators	Time
🏉 🏉 🏉	Indoor	Whole group	1 facilitator	35 min

What you will need:

Whiteboard/paper and markers

Activity focus

Use statistics about AFL players to calculate percentages

Calculate estimates for a fictional population based on the sample data provided below

Begin to investigate relationships between the data

Statistical concepts

Reinforce: Level 1. statistics, data

Develop: Level 2. population, percentage

Extend: Level 3. sample, estimate

Statistical competencies

This activity aims to develop the following competencies:

Level 3: Data measures, Relative frequency

See: 'Footy Stats Program – Statistical Competencies' for more information

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Learning Activities and Experience		Time
Introduction	Ask the group to imagine that there are only 100 players in the AFL; how many might be Indigenous? How could we come up with an ***estimate*** of this number? Based on the participants' knowledge of the Indigenous players in the AFL, the facilitator leads the discussion by asking the following prompts: • **How many Indigenous players are there in your favourite football team?** • **How could you use this number to help you estimate how many Indigenous players there would be if the total AFL population was 100 players?**	**5 min**
Body	Ask the group to imagine that you have taken a ***sample*** of 20 players from this fictional ***population*** of 100 players Explain the concept of percentage and discuss how it is used to describe a ***population***: • 'Per cent' means 'per hundred'. • "A percentage may be used to tell us how many out of 100 players may be Indigenous." As a group, calculate the percentage of Indigenous players in the ***sample*** if two of the 20 players were identified as Indigenous: • Explain that percentage is calculated by dividing the count of Indigenous players (in this example: 2) by the number of players in the ***sample*** (in this example: 20 players) then multiplying the result by 100 • Write the formula used to calculate the percentage of Indigenous AFL players in the sample as $2 \div 20 \times 100$ (i.e. 2 divided by 20 multiplied by 100) on the board • Calculate the percentage with the group ($2 \div 20 = 0.1$, multiplied by $100 = 10\%$ of players in the sample are Indigenous) As a group, discuss the use of a ***sample*** to ***estimate*** the number of Indigenous players in the fictional AFL ***population***: • "How many of the 100 players do you think may be Indigenous?" • Remind the group that the data from the ***sample*** shows that 2 of the 20 are Indigenous players which is 10% As a group, calculate a percentage for the fictional AFL ***population*** to find out how many of the total 100 players may be Indigenous: • "We know that 10% of 20 is 2 players" • "We want to calculate 10% of 100 (i.e. the whole ***population***)" • Write the formula used to calculate 10% of 100 (i.e. $10 \div 100 \times 100$) on the board and solve as a group (i.e. $10 \div 100 \times 100 = 10$): • "We can calculate 10 per cent of 100 players by dividing 10 (i.e. the 10%) by 100 and then multiplying the result by 100 (i.e. the total number of players in the ***population***)." • "10% of 100 is 10. So if 10% of the fictional AFL ***population*** of 100 players is 10, it can be estimated that 10 out of the 100 players may be Indigenous."	**15 min**
Conclusion	If possible, find out the percentage of Indigenous players in the real AFL population • Make comparisons to the fictional AFL population of 100 players.	**15 min**

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Why this is important

The ABS Footy Stats program provides a fun and interactive introduction to the world of statistics. The program enables children to participate in a range of footy activities and learn how to collect, analyse, interpret and communicate basic statistical concepts.

In this activity, participants:

- Begin to develop an understanding of the relationship between population and sample, in the context of a simple investigation, for a hypothetical population
- Participate in the process of calculating percentages for a sample and the population
- Begin to apply the data collected about the sample to estimate values for the population

What you do

Evaluate the statistical learning of the participants:

- Are the participants able to demonstrate an understanding of the difference and relationship between a population and sample?
- Are the participants able to calculate percentages?
- Are participants able to calculate percentage to make inferences, such as estimates, for the population?

Explore statistical concepts further with this activity

Population, Sample, Estimate, Percentage:

- Identify a population (e.g. an AFL club, a football club in your community, your own football team) and a characteristic of the population (e.g. number of players, number of Indigenous players) that you want to study

Note: Ensure you are able to access the relevant information you will require

- Select a sample from the population and collect data about the characteristic you have identified
- Use the data from the sample to estimate percentages to better understand the overall population (i.e. all AFL clubs, all football clubs in your community, all players in your football team)

FOOTY & STATS
MAKE A GREAT TEAM!